Before entering Usogo, Mr. Jackson made a detour to the north-east of Mount Elgon, but did not succeed in reaching Lake Rudolph, visited by Count Teleki. The country in this direction is of a barren steppe character, sparsely covered with bush, and with a few heights rising above the general level. On his way back, Mr. Jackson and his caravan travelled right across the summit of Mount Elgon, one of the most remarkable mountains in Africa. It is an extinct volcano, the crater of which is eight miles in diameter, its appearance reminding one of the great craters seen in lunar photographs. This mountain is over 14,000 feet high, and, taken in combination with Kilimanjaro, Kenia, and Ruwenzori, seems to indicate that at one period this must have been a region of intense volcanic activity. High up on the face of this mountain Mr. Jackson came upon the caves of which Mr. Thomson told us. These he found to be entirely natural, and not the work of man. One is so large that on its floor has been built a village of huts; for the caves are inhabited by natives who have been compelled to take refuge here from their enemies in the plains. Mr. Jackson's natural history collections are very extensive; very many new species of birds and insects have been sent home. Mr. Bowdler Sharpe stated that these collections have revolutionized existing notions as to the zoological geography of Africa. In the Mount Elgon region types are found similar to those of Abyssinia on the one hand and the Cape on the other; and Mr. Sharpe stated that the region most resembling that of Elgon is that of the Cameroons Mountains in West Africa; but this is based mainly on the ornithology of the two regions, the entomology leading to somewhat different conclusions. On the whole, the geographical and natural history results of the expedition are of high importance, and credit is due to the British East Africa Company for encouraging work of this kind.

NOTES.

PROF. HELMHOLTZ, as we have already stated, will celebrate his seventieth birthday on August 31. In honour of the anniversary, a marble bust of Prof. Helmholtz will be prepared; and it is proposed that there shall be a Helmholtz Medal, to be bestowed on the most eminent German and foreign physicists. An international committee has been formed for the purpose of carrying out these schemes.

AT its last meeting, January 28, the Russian Geographical Society awarded its two great gold Constantine Medals to Prof. A. Potebnya for his numerous ethnographical and philological researches, and to Prof. Th. Sloudsky for his geodetical work. The Count Lütke's medal was awarded to S. D. Rylke, also for geodetical work, and especially for the mathematical discussion of the results of the recent exact levellings. Gold medals were awarded to P. Rovinsky for his geographical and ethnographical description of Montenegro; to N. Filipoff for his work on the changes of level of the Caspian Sea; to V. Obrutcheff for a work on the Transcaspian region; and to V. Priklonsky for his manuscript, "Three Years in the Yakutsk Region." A number of silver medals were awarded to several persons for many years' meteorological observations, and various ethnographical works of minor importance.

THE ninth German Geographentag, which will meet in Vienna on April 1, 2, and 3, will deal chiefly with the present state of our geographical knowledge of the Balkan peninsula, and with the investigation of inland seas. A geographical exhibition will be held in connection with the meeting.

A ROYAL Commission has been appointed to inquire into the effect of coal-dust in originating or extending explosions in coal-mines. Mr. Chamberlain is to be the Chairman, and his brother Commissioners are Lord Rayleigh, Sir William Lewis, Prof. Dixon, Mr. Emerson Bainbridge, and Mr. Fenwick, M.P. A small committee of experts has already investigated the subject.

ON Friday last, in the House of Commons, in answer to Sir H. Roscoe, Mr. Plunket said it had been decided to proceed at once with the completion of the buildings in connection with the Science and Art Department on the east side of Exhibition Road. They would ultimately be devoted wholly to art collections, although for some years it was probable that some portions of them might be temporarily available for science collections. The buildings would, however, take several years to complete, and he was in communication with the Science and Art Department as to the best means of providing for the science requirements, and he hoped soon to be able to submit a proposal to the Treasury. As the buildings on the east side of Exhibition Road would cost some £300,000 or £400,000, it was obvious that any further immediate demands on the Chancellor of the Exchequer must be confined within as narrow limits as possible.

SOME time ago Sir Joseph Fayrer announced his intention of retiring from the presidency of the Sanitary Assurance Association. At the tenth annual meeting of the Association on Monday, Mr. Rutherfurd referred to the great services Sir Joseph had rendered to the cause of sanitary improvement, and proposed a resolution expressing warm appreciation of the valuable services rendered by him during the ten years in which he had held the office of President, and assuring him of "their high admiration for the zeal and energy manifested in his disinterested and gratuitous discharge of those services (amidst numerous other public and private duties) to the undoubted promotion of the general health and public good." This was seconded by Surgeon-General Cornish, and warmly supported by Prof. Smith, and adopted. Sir Joseph Fayrer, in acknowledging the resolution, said he should continue to take a lively interest in the Association and its work, and would retain his seat on the Council. Surgeon-General Cornish, late Sanitary Commissioner with the Madras Government, was elected President; and Sir Joseph Fayrer and Prof. Roger Smith were elected Vice-Presidents.

A CAPITAL paper on decimal coinage, weights, and measures was delivered before the Society of Arts on February 4 by Mr. J. Emerson Dowson, and is printed in the current number of the Society's Journal. He urged that there is pressing need for a thorough investigation of the whole subject by a Royal Commission; and, as evidence of the opinion of important bodies of commercial men on the subject, he mentioned that all the seventy-two Chambers of Commerce of the Association of the United Kingdom have repeatedly pronounced themselves in favour of the decimal system, and that the four large Chambers which are not members of the Association (Edinburgh, Glasgow, Liverpool, and Manchester) have taken the same ground. Sir Henry Roscoe, who presided, remarked that he himself had largely benefited by the use of the metric system, which was employed of necessity by men of science in all countries. He had also seen the simplicity and ease with which arithmetic was taught in foreign schools, and could bear testimony to the way in which the old German system of weights and measures was entirely swept away in a few months, when the new system became the law of the land, and how readily it was adopted by the people. Mr. Goschen told Mr. Leng, in answer to the memorial sent from the Dundee Chamber of Commerce, that he was well aware of the strong case which the advocates of a decimal system had made out, but the difficulties were very great, and he could not undertake to bring in a Bill. They did not expect him to do so at present; the matter required further consideration; for although several Committees and Royal Commissions had sat upon it, the whole question was not then considered, and they wanted a new Royal Commission to consider the whole subject. He could not help thinking that if pressure were brought to bear on the Government by Chambers of Commerce, and by all interested in the simplification of the present confusion, not only would a Commission be granted, but the public would be ripe for a decisive step being taken that would put us on a level with all the rest of the civilized world.

AT the meeting of the Institution of Civil Engineers on February 3, a valuable paper on electric mining machinery, by Messrs. Llewelyn B. and Claude W. Atkinson, was read. The authors maintained that electric power was destined to become an important factor in mining mechanics, on account of (1) the facility with which it could be used with machines which required to be moved from time to time; (2) the great economy in first cost and reduced cost of working owing to its efficiency being higher than that of compressed air or any other medium of power transmission; (3) the smaller cost of maintaining the cables, as compared with piping on shifting floors in roadways, &c. Methods were described which the authors considered sufficient to obviate all objections to the use of electric motors in coal-mining, whether by excluding inflammable gases or by constructions which would allow of their safe combustion. Experiments, trials, and practical work, extending over four years, showed, it was contended, that—(1) electrical pumps might be used with advantage and economy for mine-draining; (2) electrical coal-cutters could replace hand-labour with saving in cost, and increased production of coal; (3) electrical drilling-machines were available in place of machinery worked by hand or compressed air.

AT the meeting of the Royal Botanic Society on Saturday last, a gift of seeds of the Parà rubber-tree suggested to Mr. Sowerby, the Secretary, some interesting remarks on india-rubber and gutta-percha. In the Society's museum was a specimen of the first sample of gutta-percha imported to Europe —viz. in 1842—and it was shortly after that date that it was used to insulate the first submarine telegraph cables. No substitute had been found to take its place. From some papers lately published in the *Electrical Review*, he gleaned that from the "wholesale cutting down of adult trees" and the "reckless clearing and burning of the forests" the trees furnishing the most valuable kinds of gutta-percha had become exceedingly scarce, and in most localities utterly extirpated. This was also rapidly becoming the case with the trees which supply the many varieties of india-rubber, and, sooner or later, all natural vegetable products used by man would have to be artificially cultivated, as the natural supply never kept pace with the artificial demand. Some few attempts had been made to cultivate india-rubber, but as yet not very successfully.

THE latest report of the Oxford University Extension Delegacy, ending with the last summer meeting, is highly satisfactory. It appears from it that the number of courses of lectures has grown from 27 in 1885-86 to 149 last year, that the number of centres at which lectures were delivered has risen from 22 in the same year to 100 in the last session, that, whereas in 1886-87 the average number of students attending the different courses was 9908, now no fewer than 17,904 receive in the different centres the instruction given. History seems from the return to be the favourite subject—85 courses were given upon it; on literature and art 28; on various branches of natural science 25; on political economy 10. "In August, 1889," the report continues, "the second summer meeting of Oxford University Extension students was held in Oxford. I was attended by 1000 students, and lasted rather more than a month, this period being divided into two parts to meet the convenience of those students whose duties prevented them from being present during the whole meeting. During the year the system of training lecturers on their appointment has continued." Finally the report acknowledges the receipt of various scholarships intended to enable poor students to avail themselves of the opportunities afforded by the summer meeting, Lord Ripon and Mr. J. G. Talbot, M.P., being the most considerable donors.

THE other day the members of the Manchester Geological Society attended a special meeting, which was held in the Geological Museum, Owens College, to hear an address by Prof. Williamson on the vegetation of the Carboniferous age. The special object of the meeting was to afford information to those engaged in the superintendence and working of coal-mines, which would enable them to assist in the collection of specimens likely to be of scientific interest. Prof. Williamson gave a lucid and interesting description (in which he was aided by some beautiful diagrams and specimens) of the families of plants represented in the coal measures. Speaking of the assistance he had received, and still hoped to receive, from geologists residing in Oldham and elsewhere, in working out their structure, he said that one great desire he had was to enrich the museum with as complete a collection as possible. All his own specimen would shortly be transferred to that building, and he therefore felt all the more confidence in asking the help of others. He invited members of the Society to preserve and send to him any fossil plant, however fragmentary, which came into their possession from the Carboniferous strata, taking care to note the character and position of the bed in which it was found. They wanted the most exact information obtainable with reference to the vertical range of species, and also as to their range horizontally. In getting the specimens together it was of importance that they should avoid mixing those from different seams. In this way most valuable information might be gained with regard to the life-history of many at present little-known plants of the coal measures.

THE Agricultural Department of Victoria has applied to the U.S. Minister of Agriculture for the services of an expert in the growth and manufacture of tobacco. According to the *Australasian*, there is a large field for the growth and manufacture of tobacco in Victoria, but so far the efforts made in that direction have met only with indifferent success, owing to the defects arising from want of knowledge in the drying and treatment of the leaf after it has been cut. It is hoped that, if the services of a thoroughly competent expert were secured, these defects would be removed, and that before very long tobacco would form one of the chief products of the colony.

A RECENT communication of Herr Büchner to the Imperial Academy of Sciences of St. Petersburg announces that, among other objects obtained in the Chinese Province of Kansu by Herrn Potanin and Beresowski, during their expedition of 1884-87, was a skin of *Æluropus melanoleucus*. This very remarkable Bear-like animal is hitherto known only from the specimens which were procured by Père David in the principality of Moupin, in the north of Szechuen, and which are now in the Paris Museum. Herr Beresowski met with it in the mountains of Southern Kansu, at an elevation of 10,000-12,000 feet, where it inhabits the Bamboo-bushes, and is known to the natives as the *Pei-ssjun* or *Chua-ssjun*, *i.e.* White, or Spotted, Bear. Few presents, we imagine, would delight the heart of the Director of the British Museum of Natural History more than examples of this rare and little-known Mammal. As France and Russia can now both boast of specimens, England, whose interests in China are so predominant, surely ought to be able to obtain some likewise.

AN interesting paper on the destruction of wolves in France appears in the current number of the *Revue Scientifique*. The law in virtue of which rewards are given for the killing of wolves was passed on August 3, 1882, and during the last four months of that year 423 were destroyed. In 1883 the number killed was 1316, the sum paid in rewards being 104,450 francs. The number was 1035 in 1884; 900 in 1885; 760 in 1886; 701 in 1887; 505 in 1888; 515 in 1889. The departments in which most animals have been slain are Dordogne and Charente. It is believed that very soon no specimens will be left in France except those which occasionally reach it from neighbouring countries.

IT has been a practical difficulty in the use of electrical accumulators, to know, at any given time, to what extent they are charged or discharged. M. Roux, we learn from *La Nature*, has devised an indicator of charge, based on the principle that the mean density of the liquid varies according to the quantity of electricity stored. He uses a flattened glass tube, of length about equal to the depth of the liquid, and weighted so as to be heavier than the thrust it receives. It is hung by means of a platinum wire to one end of a short lever, pivoted in the middle, and having a weight on the other arm; with full charge, this lever is horizontal. At right angles to the lever is a weighted pointer, which gives indication on a horizontal scale above, with 100 divisions; the pointer, vertical at 100 when the accumulator is charged, stands at 45 after discharge. The readings on the scale indicate directly the percentage ratio of the quantity remaining in the accumulator to that of saturation. By means of electric contacts, &c., the state of charge can be announced. M. Roux finds by experiments the differences between indications of his apparatus and those of an ampere-meter placed in the circuit to have been always less than 3 per cent., which is considered very satisfactory, the object being industrial.

THE *Annals of the Astronomical Observatory of Harvard College*, vol. xxi. Part ii., contains a summary of the meteorological observations made in the year 1889 under the auspices of the New England Meteorological Society, and three investigations dealing respectively with types of New England weather, land and sea-breezes, and the characteristics of the New England climate. These essays are of a very exhaustive nature, and should be of much use to meteorologists.

THE recent earthquake in Algiers did little damage in the town itself. The first shock, which occurred at 4 a.m. (on the morning of January 15), was followed by a more violent one at 4h. 10m. lasting 12 seconds. Slight shocks were also experienced at 5 a.m. and at 7 a.m. The direction of the shocks was from south east to north-west. The inhabitants fled from their houses to the open places. The shocks were most violent at Gouraya, near Cherchel, which also suffered. In Philippeville two persons were killed and many injured by the fall of a house. In Villebourg many houses are in ruins; and numerous lives were lost there, and at Blidah, Medeah, and Orleansville.

THE journals of Nismes record three deaths in that neighbourhood resulting from poisoning by *Amanita citrina*, which appears, at least in the south of Europe, to be one of the most deadly of Fungi.

A "FLORA OF PALESTINE" is in progress edited by the Rev. G. E. Post, and is now completed as far as the end of the order *Umbelliferæ*. Several new species are described.

THE death is announced, on January 24, of Dr. Philip Carl, Professor of Physics at the Munich Royal Military College, and late editor of the *Repertorium für physikalische Technik* and the *Zeitschrift für Elektrotechnik*.

CAPTAIN ABNEY will deliver at the Society of Arts a course of five popular lectures on "The Science of Colour," on the following Friday afternoons, at half-past four o'clock:—February 13, 20, 27, March 6, 13. The lectures will be popular and elementary, and fully illustrated by experiments.

THE atomic weight of rhodium has been redetermined by Prof. Seubert and Dr. Kobbé, of the University of Tübingen, and an account of their results is published in the current number of *Liebig's Annalen*. During the last few years the atomic weights of the other five metals of the platinum group, ruthenium, palladium, iridium, platinum, and osmium, have formed the subjects of most careful investigations, mainly at the hands of Prof. Seubert, with the result that these values are considered as among the best determined of all atomic weights. The remaining metal, rhodium, must now be added to the list, for the present redetermination leaves no doubt whatever that the real value of this atomic weight has been arrived at within the ordinary limits of inevitable experimental error. The two principal former determinations afforded widely different results. That of Berzelius, in 1828, from an analysis of the salt $4KCl . Rh_2Cl_6$, gave the number 104·07; while Jörgensen, in 1883, employing the ammoniacal salt, $Rh_2(NH_3)_{10}Cl_6$, deduced the value 103·00 ($O = 16$) or 102·74 ($O = 15·96$). In the present redetermination, Seubert and Kobbé made use of the same ammoniacal compound as Jörgensen. Fine crystals of this salt are readily prepared in a state of purity, they are very stable in the air, and the salt lends itself readily to accurate analysis. It was thus in all respects eminently suitable for the purpose of an atomic weight investigation. The experimental method of treatment which was found to be attended with least possibility of error consisted in reducing the heated salt in a current of pure hydrogen to metallic rhodium, and thus determining the ratio of the weight of salt to its content of rhodium. The finely powdered crystals, after drying at 100° C., were weighed in a porcelain boat; the boat and its contents were then placed in a combustion-tube lined internally with a cylinder of platinum, the tube was gradually heated in the furnace, and a stream of hydrogen passed through. After complete reduction, and displacement of the hydrogen by a current of carbon dioxide, the metallic rhodium was found in the boat in the form of a bright grey rod. The boat and metal were then again weighed. Ten such experiments yielded values ranging, when $O = 15·96$, from 102·61 to 102·81. As the final mean, the number 102·7 is adopted; or, if $O = 16$, the round number 103·0. These values confirm those obtained by Jörgensen in an exceptionally satisfactory manner, thus setting the question finally at rest. Rhodium, therefore, retains the place in the periodic system marked out for it by its chemical behaviour, between ruthenium, of atomic weight 101·4, and Pd 106·3, and in the same vertical group as its analogue iridium.

THE additions to the Zoological Society's Gardens during the past week include two Malbrouck Monkeys (*Cercopithecus cynosurus* ♂ ♀) from West Africa, presented respectively by Mr. J. P. Heseltine and Mrs. Newton; two Common Peafowls (*Pavo cristatus* ♀ ♀), bred in Scotland, presented by Mr. Richard Hunter; two Globose Curassows (*Crax globicera* ♂ ♀), two Mexican Guans (*Penelope purpurascens*) from Central America, a Daubenton's Curassow (*Crax daubentoni* ♂) from Venezuela, deposited.

OUR ASTRONOMICAL COLUMN.

"ANNUAIRE DU BUREAU DES LONGITUDES."—This extremely useful and unique *Annuaire* for 1891 has just been published. The astronomical information is as complete as could be desired. The tables of physical and chemical constants are of the same comprehensive character. MM. Lœwy and Schulhof give an account of the comets that appeared between 1800 and 1826, and in 1889. This list completes those given from 1882 to 1890, and forms with them a catalogue that contains references to every published comet observation made this century. A table of sixty-two double stars, of which the elements are known,